

Application No. 09/715,935

59. (Amended) The method of claim 55 wherein the substrate is moved relative to the product stream while directing the stream of particles to the substrate.

60. (Amended) The method of claim 55 wherein the directing of the product stream to the substrate deposits at least about 25 grams per hour onto the substrate.

61. (Amended) The method of claim 55 wherein the substrate does not permit gas to pass through.

REMARKS

Claims 18-61 are pending. By this Amendment, claims 18, 33, 39, 42 and 55-61 are amended to more particularly point out Applicants' claimed invention. Claims 56-61 have been amended to correct an inadvertent error in the claim dependency, and Applicants do not intend to change the scope of claims 56-61. The remaining amendments are described further below. No new matter is introduced by the amendments.

Applicants thank the Examiner for the courtesy extended to their undersigned representative in a telephone interview on March 11, 2003. In particular, the claim interpretation from the Examiner's Answer was discussed. It was noted that this claim interpretation from the Examiner's Answer was inconsistent with the arguments presented in Applicants' Appeal Brief. The Examiner noted that it would likely be successful to overcome the pending rejections if the claims were clarified to exclude the sequential collection of particles produced by the apparatus of the Bi patent followed by introduction into the apparatus of the Akedo patent or the Börner patent. Applicants noted that according to the dictionary definition of "stream" that the stream concept suggested that the particles were not collected prior to forming a coating. In response,

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the Examiner indicated that it was not clear that the reactant stream and the product stream were connected.

In view of the Examiner's comments and the claim interpretation presented in the Examiner's Answer of January 29, 2003, Applicants have clarified the claims, although Applicants maintain that the un-amended claims indicated that the particles were not collected prior to forming a coating. As such, Applicants do not intend to narrow the claims relative to the intended meaning of the claims prior to the current amendments.

The amendment of claims 18, 33, 39, 42 and 55 is supported by the specification throughout and in particular, for example, at page 10, lines 15-18 ("without separate collection of particles"), page 11, lines 5-33, and the figures. Claim 18, prior to the current amendments, indicated that the "product stream compris[es] particles downstream from the radiation beam" implying that the particles were not collected prior to forming a coating since the particles are "downstream" from the radiation beam which intersects the reactant stream. In the context of the common terminology in the different independent claims and the context provided from the specification, Applicants maintain that the claims prior to the present amendments indicated that the particles were not collected prior to forming the coating since they were continuations of a stream. Merriam Webster's tenth collegiate dictionary defines a stream as "an unbroken flow (as of a gas or particles of matter)." However, to advance prosecution of the case, Applicants have amended the claims for clarity. Thus, Applicants do not intend to narrow the claims by the amendments clarifying the nature of the flow.

Furthermore, Applicants have amended claim 18 to remove the term "focused." This amendment is supported by the specification, for example, at page 14, lines 2-4. Claim 39 has been amended to clarify the depositing step, which is supported by the specification, for example, at page 15, line 32 to page 16, line 14. Claim 55 has also been amended to correct a typographical error and to add the term "surface" to clarify the connection with the claim

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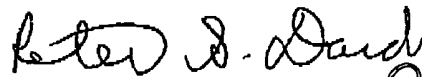
pramble. These amendments are not intended to narrow the claims, but only to provide further clarity.

CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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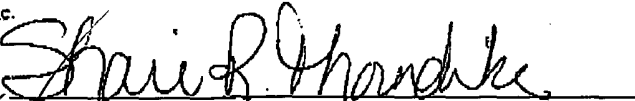
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March 28, 2003
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Shari R. Thorndike

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ATTACHMENT
REDLINED AMENDMENTClaims As Amended

Claims 18, 33, 39, 42 and 55-61 have been amended as follows:

18. (Twice Amended) A method of coating a substrate, the method comprising:
reacting a reactant stream within a flow by directing a focused radiation beam at the
reactant stream to produce within the flow a product stream comprising
particles downstream from the radiation beam, wherein the particles are
produced by the reaction and wherein the reaction is driven by energy from
the radiation beam;
directing the flow of the product stream to a substrate; and
moving the substrate relative to the flow of the product stream to coat the substrate.
33. (Amended) A method of coating a substrate comprising:
generating, within a flow, a reactant stream with a cross section perpendicular to the
propagation direction characterized by a major axis and a minor axis, the
major axis being at least a factor of two greater than the minor axis;
reacting the reactant stream to form a product stream of particles within the flow;
and
directing the flow of the product stream of particles to a substrate, wherein flow of
the product stream is maintained other than by pumping on the substrate.

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39. (Twice Amended) A method of coating a substrate having a diameter greater than about 5 cm, the method comprising:

reacting, within a flow, a reactant stream to form, within the flow, a product stream comprising product particles, wherein the particles are produced by the reaction; and

depositing simultaneously ~~a stream of particles~~ from the flow of the product stream over the entire surface of the substrate and wherein at least about 5 grams per hour of particles are deposited onto the substrate.

42. (Amended) A method of coating a substrate comprising:

simultaneously generating multiple product streams each within a corresponding flow of a reactant stream by chemical reaction driven by a light beam; and depositing the multiple product streams simultaneously on a moving substrate at sequential locations on the substrate.

55. (Amended) A method of coating a surface of a substrate, the method comprising:

reacting, within a flow, a reactant stream to produce, within the flow a product stream comprising particles wherein the particles are produced by the reaction; and

directing the flow of the product stream to the substrate to deposit at least about 5 grams per hour onto the substrate surface.

56. (Amended) The method of claim 56 ~~55~~ wherein the reaction is driven by energy from a radiation beam

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57. (Amended) The method of claim ~~56~~ 55 wherein the reactant stream has a cross section perpendicular to the propagation direction characterized by a major axis and a minor axis, the major axis being at least about a factor of two greater than the minor axis.
58. (Amended) The method of claim ~~56~~ 55 wherein the reactant stream comprises a silicon precursor.
59. (Amended) The method of claim ~~56~~ 55 wherein the substrate is moved relative to the product stream while directing the stream of particles to the substrate.
60. (Amended) The method of claim ~~56~~ 55 wherein the directing of the product stream to the substrate deposits at least about 25 grams per hour onto the substrate.
61. (Amended) The method of claim ~~56~~ 55 wherein the substrate does not permit gas to pass through.